CLAIM AMENDMENTS

1. (previously presented) A method for the wet mechanical processing of a mixture of materials using water as solvent, detergent and separating agent,
the method comprising the steps of:

continuously mixing the mixture of materials in a mixer with water as separating agent and detergent, without separating off compounds of the mixture, until a dry substance content of 15% to 25% is obtained,

a) thereafter

discharging the mixture of materials from the mixer by means of a conveyor,

adding water to the mixture such that light components remain dissolved in a solid/liquid mixture having a dry substance content of 10% to 20% and heavy components settle and are separated by means of the conveyor as a first inert heavy fraction having a grain size of > 25 mm,

sieving off, rinsing, and pressing from the remaining solid/liquid mixture, organic light materials having a grain size of 30 to 120 mm as a first organic light fraction,

b) thereafter separating by sieving and rinsing from the remaining suspension having an adjusted dry substance content of 6% to 12% first inert heavy materials having a grain size of 2-25 mm by gravity and subsequently further organic light materials having a grain size of 3 to 30 mm,

c) thereafter separating from the remaining suspension having an adjusted dry substance content of 3% to 8% further inert heavy materials having a grain size of < 2 mm by centrifugal forces and subsequently separating by sieving and rinsing further organic light materials having a grain size of 150 µm to 3 mm.

2. (previously presented) The method according to claim 1 wherein in steps a) to c) fresh water or recirculated water consisting of unprocessed and/or purified filtrate or respectively sewage water of step b) or c) is used as solvent, detergent or respectively separating agent.

3. (currently amended) The method according to claim 1, further comprising before step a) the steps of

conveying the mixture of materials into the mixer by means of a dosing conveyor and

adding water ~~already~~ to the mixture in the conveyor [[water]] for improving the wetting ability of the mixture of materials and for pre-mixing.

4. (previously presented) The method according to claim 1 wherein in step a) discharge from the mixer is separated by means of a spiral conveyor that has a sufficient free section area in an upper part, so that a portion principally consisting of light materials is directly carried away into an upflow classifier above the screw and that another portion principally consisting of heavy materials is further cleaned of light materials by means of rinsing water and is discharged via the spiral conveyor.

5. (previously presented) The method according to claim 4 wherein in step a) the light materials are transferred outward into a sieve via hydraulic pressure caused by a fill level in the mixer, pressure created by rinsing water pumps as well as by a fresh water supply via the upflow classifier.

6. (previously presented) The method according to claim 4 wherein in step a) the heavy materials in the conveyor are rinsed with filtrate of step b) and purified filtrate of the third step as well as with fresh water in a cascaded manner such that settling heavy materials are cleaned of dissolved organic material, light materials and finer heavy materials.

7. (previously presented) The method according to claim 6 wherein in step a), compressed air is additionally employed for rinsing the heavy materials in the conveyor.

8. (previously presented) The method according to claim 6 wherein the inert heavy materials that have been discharged in step a) are dumped directly or after a rotting or deterioration.

9. (previously presented) The method according to claim 6 wherein the inert heavy materials that have been discharged in step a) are crushed via a breaker and after the crushing are either added to the mixture of materials of step b) when crushed to less than 15 mm or the mixture of materials of step c) or when crushed to less than 3 mm for further purification, wherein before the crushing, metals are separated out by a metal separator.

10. (previously presented) The method according to claim 5 wherein in step a), the light materials are rinsed with purified filtrate of step c) or with fresh water during sieving.

11. (previously presented) The method according to claim 10 wherein in step a) the sieved light materials are dehydrated by a single-step or multiple-step mechanical dehydration.

12. (previously presented) The method according to claim 11 wherein the light materials are crushed before being

pressed so that a higher dehydration rate of biogenous organic compounds can be achieved.

13. (previously presented) The method according to claim 1 wherein filtrates of step a) are conveyed into a sedimentation basin of step b) due to the hydraulic pressure.

14. (previously presented) The method according to claim 13 wherein in step b) filtrates of step a) are rinsed in a conveyor with air or with a filtrate from step c) or with fresh water in a cascaded manner, wherein further heavy materials are cleaned of dissolved organic material, light materials and finer adhering heavy materials.

15. (previously presented) The method according to claim 14 wherein light materials are carried away from the sedimentation basin via an overflow to a sieve where they are sieved, rinsed and pressed.

16. (previously presented) The method according to claim 15 wherein light materials that have been separated out via the sieve are dehydrated by a single-step or multiple-step mechanical dehydration.

17. (previously presented) The method according to claim 1 wherein a filtrate of step b) at first is conveyed into a filtrate vessel and therefrom is conveyed into a hydrocyclone in step c), by means of which, according to dry substance content and viscosity of the filtrate, heavy materials of a grain size up to 50 - 150 µm are separated out.

18. (previously presented) The method according to claim 17 wherein an underflow of the hydrocyclone is classified and washed by a sorting spiral by addition of recirculated water, wherein the purified heavy fraction is washed and dehydrated via a sedimentation basin having a screw discharge by rinsing with fresh water as well as the heavy fraction that is loaded with organic material and the washing water is recirculated into the filtrate vessel of step b).

19. (previously presented) The method according to claim 17 wherein the underflow of the hydrocyclone is washed and dehydrated via a vibration sieve with fresh water rinsing.

20. (previously presented) The method according to claim 17 wherein overflow of the hydrocyclone is conveyed to a vibration sieve from which sieved-off particles are rinsed with fresh water or filtrate and pre-thickened filter cake is dehydrated

mechanically via a screw press and pressed-out water is recirculated into the vibration sieve.

21. (previously presented) The method according to claim 20 wherein filtrate from the vibration sieve is processed in an aerobic manner or in an anaerobic manner and subsequently recirculated into the process.

22. (previously presented) The method according to claim 21 wherein filtrate is conveyed into a further filtrate vessel wherein a residence time of the filtrate in this vessel as well as a residence time of the filtrate of step b) in the filtrate vessel upstream of the hydrocyclone by a respective dimensioning of the vessels is selected such that the filtrates are hydrolized.

23. (previously presented) The method according to claim 22 wherein a partial stream of filtrate from the filtrate vessel is purified via an anaerobic sewage treatment and a purified discharge from the sewage treatment is re-used as recirculated water in the process such that with a low pH of the recirculated water a higher solubility of the organic fraction can be achieved.

24. (previously presented) The method according to claim 21 wherein filtrate of step c) that has been processed in an aerobic or anaerobic manner is cleaned of pollutants or of salts

before being recirculated into the process as recirculated water via microfiltration, nanofiltration or reverse osmosis systems, such that the purified recirculated water reduces the pollutant concentration of the mixture of materials in the process .

25. (previously presented) The method according to claim 21 wherein the recirculated filtrate is heated up to 30-85° before recirculation into the process via a heat exchanger for improving separating performance of the total system, dehydration rate of the organic fraction, solubility of the fermentable organic material and sterilization of the individual fractions as well as for setting a temperature of 35° or 55° that is required for the fermentation of sewage water or of light material fractions.

26. (previously presented) The method according to claim 21 wherein for fermentation of the sewage water as well as of light material fractions, a dry or wet fermentation process is employed.

27. (previously presented) The method according to claim 26 wherein the light material fractions that have been separated out in steps a) to c) during the fermentation are adjusted to a predetermined dehydration rate and they are then crushed.

28. (previously presented) The method according to claim 1 wherein the light material fractions that have been separated out in steps a) to c) are conveyed into a hydrolizer or a percolator, whereby the light materials after hydrolysis or the percolation have better mechanical dehydration properties.

29. (previously presented) The method according to claim 1 wherein the light materials that have been separated out during the first to step c) are dehydrated principally mechanically or are thermally or thermally-biologically after-treated and dried for energy utilization or utilization as material in the form of a dry fertilizer.

30. (previously presented) The method according to claim 29 wherein the thermally dried light material fractions are used as dry fertilizer pellets after a pelletization for the improvement of plant tolerance.

31. (previously presented) The method according to claim 29 wherein the dried light fractions are employed as pelletization auxiliary means for pelletization of substitute combustibles as packaging waste or reprocessed sieve overflow from mechanical-biological processing plants, whereby at the same time thermal stability of the combustible pellets in shaft gasification methods is improved.

32. (previously presented) The method according to claim 1 wherein sludge from the aerobic and anaerobic recirculated water processing is utilized due to a remaining pollution load separately from the purified light material fractions.

33. (previously presented) The method according to claim 1 wherein very fine heavy materials that remain in the filtrate after step c) and remaining very fine material are separated along with the sludge from the purification of the recirculated water.

34. (previously presented) The method according to claim 1 wherein control of the quantities of the circulation, fresh and sewage waters is effected depending on the viscosity of the recirculated water and the current consumption of the mixer.

35. (currently amended) A device for performing the method according claim 1, the device consisting of the serial connection of:

a dosing conveyor, a mixer, a spiral conveyor, an upflow classifier, a sieving device and a press;

in step a) of the method

a sedimentation basin, a screw discharge, a sieving device and a filtrate vessel; and

in step b) of the method

a rotary pump, a hydrocyclone, a vibration sieve and a screw press, as well as, upstream of the hydrocyclone, a sorting spiral, a calming bath with sand discharge, [[; and]]

in step c) of the method

from the remaining suspension having an adjusted dry substance content of 3% to 8% further inert heavy materials having a grain size of < 2 mm are separated out by centrifugal forces and subsequently further organic light materials having a grain size of 150 5676Rive
µm to 3 mm are separated by sieving and rinsing.

36. (previously presented) The device according to claim 35 wherein the dosing conveyor of step a) of the method is a spiral conveyor.

37. (currently amended) The device according to claim 35 wherein the mixer of step a) of the method is designed as a standing vessel having a stirrer that is ~~preferably~~ driven from below, wherein discharge of the suspension is in a lower area of the mixer.

38. (previously presented) The device according to claim 35 wherein the spiral conveyor of step a) of the method has a maximum diameter of 300 mm and a thread pitch of about 150 mm as well as in an upper area a free flow cross section of about 150 mm.

39. (previously presented) The device according to claim 35 wherein the sieving device of step a) of the method is a sieving screw that beside the function of sieving and washing also presses the light materials.

40. (previously presented) The device according to claim 35 wherein the press of step a) of the method consists of one or more screw presses.

41. (previously presented) The device according to claim 35 wherein the sedimentation basin of step b) is a sand classifier.